erlotinib). Efficacy data were based on the TORCH and TAX317 randomised controlled trials. Cost data were obtained from NHS Reference Costs, British National Formulary list prices and other publically-available sources. **RESULTS:** In the base-case analysis, the estimated incremental cost-effectiveness ratio exceeded the NICE willingness-to-pay threshold of £20,000 per quality-adjusted life year gained. Univariate and probabilistic sensitivity analyses suggested the results were robust to parameter changes, showing greatest sensitivity to variation in overall survival parameters. **CONCLUSIONS:** Our model suggests that, from the perspective of the UK NHS, an EGFR-TK mutation status-guided treatment strategy across first- and second-line treatment of NSCLC is not cost-effective compared with a strategy not dependent on mutational status.

PCN124
COMPARATIVE COST-EFFECTIVENESS STUDY OF MODERN RADIATION THERAPIES IN HUNGARY FOR LOCALIZED PROSTATE CANCER
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OBJECTIVES: The introduction of innovative medical devices with high investment and operational costs is often delayed in countries with severe resource constraints. Cost-effectiveness analysis can help decision-makers to understand the economic value of such technologies. The purpose of our study was to compare the cost-effectiveness of two modern radiation therapy techniques, the stereotactic body radiation therapy (SBRT) and intensity-modulated radiation therapy (IMRT) compared to the 3-dimensional conventional radiation therapy (3DCRT) for treatment of low- to intermediate-risk prostate cancer in Hungary. **METHODS:** A Markov model was constructed with the following disease states of a 65-year-old patient with organ confined prostate cancer: no evidence of disease after radiation therapy, hormone therapy, chemotherapy, death. Transition probabilities were calculated based on the international literature for SBRT, IMRT and 3DCRT. Utility values for each health state were obtained from publically available secondary sources. Costs in the model were calculated based on the Hungarian Health Insurance Fund rates, and were converted to EUR by applying actual exchange rates (1 EUR = 305 HUF). Analysis was conducted from payer perspective for 65-year-old patients over 10 years time horizon. **RESULTS:** Based on preliminary calculations the expected mean cost of patients undergoing SBRT, IMRT and 3DCRT were 2,201 EUR, 5,704 EUR and 11.549 EUR respectively. Expected QALYs were 6.00 for SBRT, 5.8 for IMRT and 3.9 for 3DCRT. Compared to 3DCRT, both IMRT and SBRT were less costly and resulted in more health gain. **CONCLUSIONS:** The modern SBRT and IMRT are not only cost-effective compared to the conventional 3DCRT but also provide a great cost saving potential for the Hungarian health care system and may improve access to radiation and quality of life for patients. Appropriate financial incentives in the DRG system should support the uptake of cost-effective hospital technologies in Hungary.

PCN125
SYSTEMATIC CRITICAL REVIEW OF ECONOMIC EVALUATIONS OF RITUXIMAB, ADDED TO CONVENTIONAL CHEMOTHERAPY REGIMEN IN THE TREATMENT OF PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIC REFRACTORY
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OBJECTIVES: To review the cost-effectiveness studies of chronic lymphocytic leukemia (CLL) treatment, in combination and in comparison with fludarabine and cyclophosphamide chemotherapy (R-FC) in refractory patients or patients who had been previously treated. **METHODS:** Search and analysis of scientific evidence: the basics of The Cochrane Library, Centre for Reviews and Dissemination (CRD), Embase, Lilacs, Database of the Brazilian Network for Technology Assessment (SISREBRATS), and MEDLINE via PubMed were searched. Aiming to meet economic evaluations (AVE), or evaluations of health technologies (ATS), comparing schemas cyclophosphamide and fludarabine (CF) and the same plus Rituximab (R-FC). Studies were only selected in second-line treatment for CLL. **RESULTS:** Two economic evaluations studied the treatment of patients with refractory or relapsing disease (R-FC vs FC). In the study, 24% had improvement in progression-free survival outcome ($p < 0.05$) in the R-FC, with more patients achieving partial or complete response in this group (61% vs 49%, $p < 0.05$). There was no statistically significant difference in overall survival. The Rituximab caused more adverse effects, but values of statistical tests for these outcomes are not presented. In a technology assessment conducted by NICE, even with reservations, the drug was recommended in view of the British health care system. **CONCLUSIONS:** There is significant uncertainty in the relevant outcomes for stages of refractory or relapsing disease. Few clinical trials evaluating the effectiveness of Rituximab in patients with CLL, which demonstrate no impact on overall survival, were found. In addition to the significant increase in costs for managing the disease.

PCN126
WHAT IS THE MOST COST-EFFECTIVE STRATEGY FOR TREATING CHRONIC MYELOID LEUKEMIA AFTER IMATINIB LOSES PATENT EXCLUSIVITY IN EUROPE?
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OBJECTIVES: To analyze the cost-effectiveness of treating all chronic-phase chronic myeloid leukemia (CML) with imatinib initially compared to physician-choice between imatinib or the second-generation tyrosine kinase inhibitors (TKIs) dasatinib or nilotinib. Imatinib will lose patent exclusivity between 2015-2016 and its price is expected to drop 60-90% within one year throughout Europe. **METHODS:** A Markov model simulating "step-therapy" compared to "physician-choice" in treating CML in 2015 through 5 years. The model assumes a European societal perspective. In both approaches, if initial treatment fails, patients are switched to a second-generation TKI. Patients are assumed to switch if they fail to meet efficacy endpoints: complete cytogenetic response (CCyR) or major molecular response (MMR). The model assumes stabilized prices of second-generation TKIs, but discounts the price of imatinib: 100% for first 6-months; 60-80% for second 6-months; and 10-30% thereafter. For each drug, tolerance, efficacy and the probabilities of treatment choice, switching and failure were drawn from published clinical trials. Quality-adjusted life years (QALYs) were based on U. K. preference weights (Szabo et al. 2010). According to Hoyle et al. (2011), direct medical costs per patient were: £20,244 for imatinib; and ~£30,000 for dasatinib and nilotinib. Additional costs included patient monitoring and allogeneic transplantation. Costs and QALYs were discounted at 3% (British Pounds Sterling (£); 2013). Sensitivity analyses tested parameters for impact on results at a willingness-to-pay of £50,000/QALY. **RESULTS:** Step-therapy costs less and offers clinically-equivalent utility (£62,388; 2.864 QALYs) compared to physician-choice (£71,268; 2.879 QALYs), at an ICER of £592,000/QALY. The results are robust to changes based on univariate analyses of each parameter. Multivariate probabilistic sensitivity analyses found step-therapy cost-effective in 99.9% of 10,000 Monte Carlo simulations. **CONCLUSIONS:** When imatinib loses patient protection between 2015-2016 throughout Europe, it will be the cost-effective initial treatment strategy for CML compared to second-generation TKIs.

PCN127
LITERATURE REVIEW OF DECISION-ANALYTICAL MODELS USED IN THE ECONOMIC EVALUATION OF EMPIRICAL/TARGETED ANTIFUNGAL TREATMENTS FOR INVASIVE FUNGAL INFECTIONS
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BACKGROUND: Invasive fungal infections (IFIs) are an important cause of morbidity and mortality in immunocompromised patients. Based on the pathogen identification status, either empirical (without diagnosis) or targeted (with diagnosis) antifungal therapy is administered to symptomatic patients (e.g. with fever). Several antifungal agents are available and their cost-effectiveness is often evaluated using decision analytic models (DAMs). **OBJECTIVES:** The objective was to review all published DAMs used in economic evaluations of empirical/targeted antifungal treatments for IFIs. This approach is novel as previous reviews were either pathogen or agent-specific. **METHODS:** A review was conducted in MEDLINE/EMBASE to identify all economic evaluations that included DAMs published until 1-1-2014. Previous reviews were checked for additional studies. Non-English and studies of prophylactic treatment were excluded. Data extracted included: population, indication, comparators, model structure, time horizon, outcomes, events, year, country, and sponsorship. **RESULTS:** Overall, 24 published economic evaluations including a DAM were identified. 54% (n=13) were for targeted treatments and the remaining (n=11) for empirical treatments. 62% of the DAMs on targeted treatments (n=8) focused on invasive pulmonary aspergillosis and the remaining 38% (n=5) on invasive candiasis/candidemia. The majority (73%, n=8) of DAMs evaluating empirical treatments focused on patients with persistent fever/febrile neutropenia. Lipid formulation amphotericin-B was a comparator in 46% (n=11) of the studies, followed by caspofungin in 42% (n=10) and voriconazole in 42% (n=10). 92% of the DAMs (n=22) included only a decision tree, whereas the remaining 8% (n=2) embedded a lifetime Markov model. The majority (54%, n=13) had a hospital perspective and time horizon of less than 12 weeks (54%, n=14). Only one study utilized real-world data. **CONCLUSIONS:** There are major differences in the modeling approach, time horizon, comparator (s), treatment sequences and outcomes of published economic evaluations in IFI. A list of minimal, consensus-based methodological and structural requirements for DAMs on antifungal treatments of IFIs, elicited from key experts is needed.

PCN128
EXPANSION OF THE NORWEGIAN HPV VACCINATION PROGRAM
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OBJECTIVES: To evaluate the cost-effectiveness of expanding the Norwegian HPV vaccination program to catch-up females and 12 years old boys. **METHODS:** We systematically searched the literature for randomized clinical trials (RCTs) that examined the effect of HPV vaccines on cancer mortality and incidence, precancerous stages and serious adverse events. We assessed selected publications for potential risk of bias, and the overall quality of the evidence for each outcome using GRADE. We adapted a published economic model to the Norwegian setting with respect to incidence of HPV-related outcomes, costs and quality adjusted life years (QALYs) lost from HPV-related diseases. The cost utility analysis reported results in Euros/QALY gained in both a public health budget and a societal perspective. **RESULTS:** We included 46 publications reporting on 13 RCTs for young women, and 3 on 2 RCT for boys (maximum follow-up period: three-four years). We found a borderline protective effect of HPV catch-up vaccination on all CIN2+, with a pooled risk ratio (RR) of 0.80 (95% CI: 0.62-1.02) for a follow-up period of 4 years. HPV catch-up vaccination was associated with a reduction in VIN2+ and VaIN2+ lesions, and genital warts. No difference in risk of serious adverse events was seen in vaccinated participants versus unvaccinated women (pooled RR of 0.99 (0.91-1.08)). We are currently reviewing the studies on boys. From a public health budget perspective, catch-up vaccination led to higher costs and health gains and an ICER=70371€. From a societal perspective, the incremental costs were lower, resulting in an ICER=67365€. **CONCLUSIONS:** This systematic review indicates that a HPV catch-up vaccination could be beneficial and cost-effective for young women. The long-term effect of such a vaccination, and its effect on cancer incidence and mortality is still unclear.

PCN129
COST-EFFECTIVENESS OF RADICAL PROSTATECTOMY, RADIATION THERAPY AND ACTIVE SURVEILLANCE FOR THE TREATMENT OF LOCALIZED PROSTATE CANCER – A CLAIMS DATA ANALYSIS
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OBJECTIVES: Standard treatment for localized prostate cancer is radical prostatectomy (PE) or radiation therapy (RT) which frequently cause erectile dysfunction (ED) and incontinence (IC). As tumor progression often is slow, active surveillance (AS) has been proposed as an alternative treatment strategy. This study compares the cost-effectiveness of the three treatment strategies in a German context. **METHODS:** Based on claims data of a German sickness fund we analyzed men diagnosed with prostate cancer (ICD-10 code C61) in 2008. Life years gained and complication rates of ED and IC as well as costs of inpatient and outpatient treatment, pharmaceuticals, physical therapy, medical aids and copayments were tracked for 2.5 years after the initial treatment. An excess-cost analysis was applied. Strategies were compared in an age-matched and comorbidity-adjusted approach. **RESULTS:** The baseline study sample included 25,376 individuals. Exclusion of metastases, other cancer diagnoses and treatment strategies resulted in 910 men with PE, 292 with RT and 124 with AS. After matching 107 men remained in the AS group and 214 each in the PE and RT groups with a mean age of 70 years. Risk of long-term ED (PE: 0.112, RT: 0.009, AS: 0.056) and IC (PE: 0.313, RT: 0.009, AS: 0.084) was highest in the PE group. Compared to RT and AS, PE was associated with more life years gained during the cause of the study. Due to high inpatient costs of the initial surgery PE had ca. €11,000 higher total per capita costs than RT and AS. **CONCLUSIONS:** The analysis indicates that PE is associated with better prognosis and higher overall costs compared to RT and AS. 2.5 years follow-up might, however, not be enough to detect prostate cancer-specific deaths.

PCN130

CRITICAL REVIEW OF COST-EFFECTIVENESS ANALYSES (CEA) OF PREVENTION STRATEGIES AGAINST DISEASES ASSOCIATED WITH HUMAN PAPILLOMAVIRUS (HPV) INFECTION

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OBJECTIVES: It is estimated that almost all cervical cancers are associated with HPV infection. In most industrialised countries, cervical screening and vaccination with a bivalent or quadrivalent vaccine are recommended to prevent the disease. The current study aimed to critically review the results of CEAs that have assessed the trade-off between screening and vaccination. **METHODS:** A systematic literature review was conducted in order to explore the cost-effectiveness of HPV vaccination strategies with or without different screening strategies within the geographical context of Western Europe, North America and Australia. Modelling approach, disease considered, vaccination/screening settings and costs were compared. **RESULTS:** A total of 1,188 citations were identified and 20 studies were included in the review. Heterogeneity was seen across studies in terms of modelling approach, disease and prevention strategies considered. Inclusion of more HPV-related diseases significantly improves cost-effectiveness. The strategies combining screening and vaccination were found to be cost-effective when compared to vaccination or screening alone. In terms of screening strategy, HPV DNA testing with cytological triage showed a trend to be the optimal strategy in vaccinated girls. However the gain in benefits reduced as the interval between screenings is reduced. Delaying the starting age of screening could be cost saving, with a limited increase in risk of cancer. An increasing vaccine valence seemed to counterbalance the detrimental effect of delayed/less frequent screening while the total costs of cervical disease prevention/treatment may be maintained or decreased. Lastly, vaccine price seemed to affect the incremental cost-effectiveness ratio proportionally. **CONCLUSIONS:** Despite heterogeneity in methodology across studies, similar trend of cost-effectiveness of competing prevention strategies was witnessed. In light of the trial results of the new nonavalent HPV vaccine, which provides protection against five additional types of the virus, the optimal prevention strategy needs to be reassessed within local context.

PCN131

COST-EFFECTIVENESS ANALYSIS OF FULVESTRANT IN THE TREATMENT OF METASTATIC BREAST CANCER IN SECOND-LINE CHEMOTHERAPY

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OBJECTIVES: To conduct a pharmacoeconomic evaluation of the application of fulvestrant compared with docetaxel and paclitaxel in the treatment of metastatic breast cancer in second-line chemotherapy. **METHODS:** Literature review of clinical effectiveness and safety of use of fulvestrant was conducted. Assess of the quality of research and level of evidence obtained in these results was performed. Direct medical costs consisted of the cost of the drug, the cost of patient management and correction of side effects. Duration of therapy, its effectiveness and side effects were obtained from relevant studies on clinical effectiveness (CONFIRM 2013, S. Jones et al. 2005). The cost of certain hematologic side effects have been taken from the study Belousov DU et al, 2012. To estimate the duration of hospital stay in the development of not hematological side effects, conducted a survey of experts. After calculating the total medical costs on compared regimens was conducted cost - effectiveness analysis with the calculation of CER. ResultsAccording to studies CONFIRM, 2013 and S. Jones et al. 2005., in patients taking fulvestrant PFS and OS were to 6.5 and 26.4 months, docetaxel - 5,7 and 15.4 months, paclitaxel - 3,6 and 12.7 months. The total cost of treatment were maximal for the docetaxel - 17685 USD, significantly lower for fulvestrant - 11803 USD and the minimal for paclitaxel - 7205 USD Cost-effectiveness analysis showed that in spite of the average cost of treatment, taking into account its effectiveness in PFS and OS, the best CER was shown for fulvestrant, followed by paclitaxel and docetaxel. The sensitivity analysis showed that the simulation results are resistant to increase of the prices for fulvestrant i up to 12%. **CONCLUSIONS:** The use of fulvestrant for the treatment of metastatic breast cancer in second-line chemotherapy is more cost effective than the appointment of docetaxel and paclitaxel.

PCN132

COST-EFFECTIVENESS EVALUATION OF BRENTUXIMAB VEDOTIN FOR REFRACTORY/RELAPSED HODGKIN LYMPHOMA: A COMPARATIVE ANALYSIS OF THE RESULTS OF MEXICO AND VENEZUELA

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OBJECTIVES: Brentuximab vedotin is an orphan drug currently indicated for treatment of patients with refractory/relapsed hodgkin lymphoma CD30+ following prior Auto Stem Cell Transplant (ASCT) or following two prior chemotherapy regimens. This is a group of patients with a reported median survival of 12 months, with no defined standard of care and for whom clinical trials are single armed due to lack of appropriate comparators and scarcity of patients. Hence, an indirect comparison was performed to determine the cost-effectiveness of brentuximab vedotin in different countries. **METHODS:** A three state Markov model was developed. Effectiveness of brentuximab vedotin was obtained from the clinical trial of Gopal 2012. Effectiveness for the control group was obtained from 3 clinical trials evaluating survival of post-ASCT patients where data was disaggregated based on the patients´ response to prior ASCT/chemotherapy. The assumption was that only patients with ASCT/chemotherapy failure would serve as controls. The treatments received by the control group were based on the review of Martinez 2013, where 64% received chemotherapy, 29% AlloSCT and 8% AutoSCT. Simulations were run for the Mexican and Venezuelan contexts. Direct medical costs were obtained from the local public sectors and WHO-CHOICE. **RESULTS:** For the base case scenario of both countries the ICERs (USD/LYG) were respectively $38,614.34 (Mex) and $57,854.07 (Ven), which compares favorably against accepted ICERs in the orphan drugs field. In the univariate sensitivity analysis the model was mainly sensitive to the costs of brentuximab, AutoSCT and AlloSCT. **CONCLUSIONS:** Brentuximab vedotin is a cost-effective alternative for both countries, especially in the space of orphan drugs. The low costs of AutoSCT and AlloSCT in Venezuela relative to its GDP were what mainly accounted for higher ICERs. Differences in chemotherapy usage and costs did not alter the model. As a limitation, local epidemiology was not accounted for due to lack of data.

PCN133

ECONOMIC EVALUETION OF FULVESTRANT 500 MG (F500) VERSUS ORIGINAL NONSTEROIDAL AROMATASE INHIBITORS IN PATIENT WITH ADVANCED BREAST CANSER IN RUSSIA (2 LINE THERAPY)

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OBJECTIVES: to perform cost-effectiveness analysis fulvestrant 500mg (F500) for the treatment of first progression or recurrence of advanced breast cancer in postmenopausal patients compared with anastrozole 1mg (ANAS1), letrozole 2.5mg (LET2,5), exemestane 25mg (EXE25) and exemestane 25mg+everolimus 10mg (EXE25+EVE10). **METHODS:** the data on efficacy and safety of 2-line hormonal therapy of breast cancer were derived from a network meta-analysis and clinical data publication for overall survival (OS), progression free survival (PFS) and serious adverse events (SAE). We considered the direct costs on second and third line hormonal therapy and resource utilization. Data on resource usage, were based on expert opinion and open sources. 1-way sensitivity analyses were conducted. **RESULTS:** in terms of OS F500 (mean 23.33 month) was as effective as ANAS1 (22.12) and more effective than LET2.5 (17.44) and EXE25 (18.31). The highest incremental cost-effectiveness ratio (ICER) estimated for F500 versus ANAS1 was 84,592 USD per year with incremental effectiveness 1.21 month. The lowest ICER estimated for F500 versus LET2.5 was 22,873 USD per year with incremental effectiveness 5.90 month. The ICER for F500 versus EXE25 was 25,890 USD per year. In terms of PFS EXE25+EVE10 was more effective and costly, than F500. The CER for F500 was 1,714 USD per year versus 4,215 USD for EXE25+EVE10. A series of one-way sensitivity analyses showed this result is robust to variations in costs of drugs, physician examination, and variation in costs associated with SAE. **CONCLUSIONS:** the use of F500 is more effective than LET2.5 and EXE25, and at least as efficacious as ANAS1 in terms of OS among postmenopausal women with advanced breast cancer after failure on 1-line endocrine therapy. In terms of PFS F500 less efficacious than EXE25+EVE10, however substantially cheaper. From perspective of federal health care system, the cost of LYG for F500 is less than the willingness to pay threshold.

PCN134

WILL GOVERNMENTS BE ABLE TO AFFORD A CANCER CURE UNDER CURRENT HEALTH ECONOMIC EVALUATION METHODS?

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OBJECTIVES: Cancer accounts for around 1.3 million deaths and €50 billion in health care expenditure in the European Union. Balancing increasing treatment costs and prevalence will be increasingly difficult for governments to manage. Advances in immunotherapies provide hope for a cancer cure; however its cost might be out of reach for governments under current health economic evaluation methods which will be the aim of this research. **METHODS:** The years of life lost (YLL) in the UK due to cancer were obtained from the Institute of Health Metrics and Evaluation (IHME) database and multiplied by the NICE cost effectiveness threshold of £20,000 per Quality Added life Year (QALY), this gave a first estimate of the potential cost of a cancer cure that would be within an acceptable cost effectiveness threshold. This cost was then modified to take into account the quality of life (QoL) of the general population, QALY discounting, cancer onset age, and other demographics. YLL due to disability in cancer were not included in the calculation. **RESULTS:** It is estimated that 32.4% of the total YLL per year in the UK (5,615,310) are a consequence of cancer. The cost of saving these YYL at £20,000 per QALY was estimated to be around £12 billion for all cancers per year, meaning an extra £425 in taxes would have to be generated